## REMARKS

Claims 1 through 3 and 6 through 12 are pending in this Application. Claims 1 through 3 and 6 have been amended, claims 4 and 5 cancelled, and new claims 7 through 12 added. Care has been exercised to avoid the introduction of new matter. Adequate descriptive support for the present Amendment should be apparent throughout the originally filed disclosure. Applicants note that new claim 7 basically corresponds to original claim 3 but dependent upon claim 2; new claim 8 basically corresponds to original claim 4 but made dependent upon claim 1; new claim 9 basically corresponds to original claim 4 but depends from claim 2; new claim 10 basically corresponds to original claim 5 but made dependent upon claim 1; and new claim 11 basically corresponds to original claim 5 but made dependent upon claim 2. Applicants submit that the present Amendment does not generate any new matter issue.

**Claims 1 through 5 were rejected under the second paragraph of 35 U.S.C. § 112.**

In the statement of rejection, the Examiner asserts that the claims are replete with grammatical and idiomatic errors. This rejection is traversed.

Indefiniteness under the second paragraph of 35 U.S.C. § 112 is a **question of law,** not grammar. *Personalized Media Communications LLC v. U.S. International Trade Commission, 161 F.3d 696, 48 USPQ2d 1880 (Fed. Cir. 1998); Tillotson, Ltd v. Wlaboro Corp., 831 F.2d 1033, 4 USPQ2d 1450 (Fed. Cir. 1987); Orthokinetics Inc. v. Safety Travel Chairs Inc., 806 F.2d 1565, 1 USPQ2d 1081 (Fed. Cir. 1986).* Accordingly, in rejecting a claim under the second paragraph of 35 U.S.C. § 112, the Examiner must provide a basis in fact and/or cogent technical reasoning to support the ultimate legal conclusion that one having ordinary skill in the art, with the supporting specification in hand, would not be able to reasonably ascertain the scope of protection defined by a claim. *In re Okuzawa, 537 F.2d 545, 190 USPQ 464 (CCPA 1976).*

Significantly, consistent judicial precedents holds that **reasonable precision** in light of the particular subject matter involved is all that is required by the second paragraph of 35 U.S.C. § 112. *Zoltek Corp. v. United States*, 48 *Fed. Cl. 240, 57 USPQ2d 1257 (Fed. Cl. 2000); Miles Laboratories, Inc. v. Shandon, Inc., 997 F.2d 870, 27 USPQ2d 1123 (Fed. Cir. 1993); North American Vaccine, Inc., v. American Cyanamid Co., 7 F.3d 1571, 28 USPA2d 1333 (Fed. Cir. 1993); U.S. v. Telectronics Inc., 857 F.2d 778, 8 USPQ2d 1217 (Fed. Cir. 1988); Hybritech, Inc. v. Monoclonal Antibodies, Inc., 802 F.2d 1367, 231USPQ (Fed. Cir. 1986).* Applicants stress that claims must be interpreted as one having ordinary skill in the art would have interpreted the claims in light of and consistent with the supporting specification. *Zoltek Corp. v. United States, supra; Miles Laboratories, Inc. v. Shandon, Inc., supra.*

Applicants would further point out that claims can only be held indefinite if reasonable efforts at claim interpretation prove futile, and that the claim is insolubly ambiguous with no narrowing construction proper regardless of how formable a task it is to understand the claim. *Exxon Research & Eng'g., Co. v. United States, 265 F.3d 1371, 1375 [60 USPQ2d 1272] (Fed. Cir. 2001). See also Invitrogen Corp. v. Biocrest Manufacturing L.P., ____ F.3d ____, 76 USPQ2d 1741 (Fed. Cir. 2005).*

In applying the above legal tenets to the exigencies of the case, Applicants submit that the Examiner did not discharge the initial burden of establishing a *prima facie* basis to deny patentability to the claimed invention under the second paragraph of 35 U.S.C. § 112. All the Examiner has done is assert that the claims are indefinite based upon generalities. However, the Examiner has not identified any factual basis to support the ultimate legal conclusion that the claims are insolubly ambiguous. On the other hand, Applicants submit that one having ordinary skill in the art would have no difficulty understanding the scope of the claims, particularly when reasonably interpreted and allowed in light of and consistent with the written description of the specification, which is the judicial standard. *Miles Laboratories, Inc. v. Shandon, Inc., supra.* Applicants, therefore, submit that the imposed rejection of claims 1 through 5 under the second paragraph of 35 U.S.C. § 112 is not legally viable and, hence, solicit withdrawal of thereof.

**Claims 1 through 6 were separately rejected under the second paragraph of 35 U.S.C. § 112.**

In the statement of rejection the Examiner asserted that the claims are incomplete for omitting essential structural cooperative relationships of elements, employing an alternative expression, and a perceived antecedent basis issue in claim 6. This rejection is traversed.

As previously pointed out, indefiniteness under the second paragraph of 35 U.S.C. § 112 is a question of law. *Personalized Media Communications LLC v. U.S. International Trade Commission, supra; Tillotson, Ltd v. Wlaboro, supra; Orthokinetics Inc. v. Safety Travel Chairs, supra.* **Further, it is Applicants' prerogative to define what they consider to be their invention.** *In re Ehrreich, 590 F.2d 902, 200 USPQ 504 (CCPA 1979); In re Borkowski, 422 F.2d 904, 164 USPQ 642 (CCPA 1970).* Again, claims are interpreted in light of and consistent with the written description of the specification through the eyes of one having ordinary skill in the art. *Miles Laboratories, Inc. v. Shandon, Inc., supra. See, also, Phillips v. AWH Corp., 415 F.3d 1303, 75 USPQ2d 1321 (Fed. Cir. 2005) (en banc).*

With the above legal principles in mind, Applicants submit that one having ordinary skill in the art would have no difficulty understanding the scope of the claimed invention, particularly when reasonably interpreted in light of and consistent with the written description of the specification. *Miles Laboratories v. Shandon, Inc., supra.* Specifically, as one having ordinary skill in the art would have understood, X (= pore size) represents the blocking ability of the membrane, and I (= L/X) represents the ratio of the mean of the maximum fibril length (L) of the fibrous framework surrounding each pore to the pore size. For the benefit of the Examiner, and to facilitate understanding, Applicants will explain the case where X = 1 (the pore size is 1 μm). Specifically, a comparison will be made between (X, Y) = (1, 30) which is outside of the scope of the invention, and (1, 125) which is within the scope of the invention.

The examples are schematically illustrated in the attached Figs. 1(A) and 1(B) (Exhibit A). Fig. 1(B) shows a membrane in which the fibers in an outer surface are dense and short, while fibers in an inside layer are very long and coarse. Fig. 1(A) shows the structure in which the fiber length and density in an outer surface are substantially the same as in the inside layer. The structure shown in Fig. 1(A) is produced by a conventional manufacturing method. In this case, when the pore size is 1 μm, i.e., when particles of 1 μm are cut, the particles tend to be trapped by collision with the fibers over the entire region in the thickness direction of the membrane. On the other hand, in the structure illustrated in Fig. 1(B), which represents the present invention, even with the same pore size of 1 μm, the fibers in the surface layer are short in any direction including the thickness direction and, hence, particles are mostly trapped near the outer surface of the thickness direction because of the increased number of collisions in this region. Therefore, in accordance with the present invention, the fiber length only in the outer surface area is used as an evaluation index for defining effective filtration characteristics.

As to the asserted alternative claim language, such does not render a claim indefinite. *Ex parte Cordova, 10 USPQ2d 1949 (BPAI 1987); Ex parte Head, 214 USPQ 551 (Bd.App. 1981).* Rather, as one having ordinary skill in the art would have understood, the filtration pressure is not limited to 0.1 MPa, but may be any desired value. The ratio of trapping of particles by a fibrous porous membrane generally varies depending on the collision rate of particles during filtration, etc. Therefore, in order to define the pore size of a fiber, it is important to define the trapping ratio of particles under a specified pressure. In the present invention, the pore size of the member is specified on the basis of the standard pressure of 0.1 MPa to be applied during filtration, as would have been understood by one having ordinary skill in the art. Therefore, the pressure is an index for accurate relative evaluation, not a parameter which specifies a material itself, as would have been understood by one having ordinary skill in the art.

The Examiner also asserted that the meaning of "mean maximum length" is unclear. Applicants disagree. As one having ordinary skill in the art would have understood, the surface pores of a porous membrane are formed to be surrounded by fibers. In the present invention, the term "mean maximum length" is used for specifying an effective material, and would have been so understood by one having ordinary skill in the art. The term means the maximum distance between two points on the periphery of each of many pores surrounded by fibers. The distances of many pores are calculated (measured) and averaged to determine the mean maximum length. In this respect the Examiner's attention is invited to Fig. 2 appearing in Exhibit A hereto.

Applicants note that claim 6 has been amended to address the antecedent basis issue raised by the Examiner.

Based upon the foregoing, Applicants submit that one having ordinary skill in the art would have no difficulty understanding the scope of the claimed invention, particularly when reasonably interpreted in light of and consistent with the written description of the specification, which is the judicial standard. *Miles Laboraties, Inc. v. Shandon, Inc., supra.* Applicants, therefore, submit that the imposed rejection of claims 1 through 6 under the second paragraph of 35 U.S.C. § 112 is not legally viable and, hence, solicit withdrawal thereof.

**Claim Objections**

The Examiner objected to claims 5 and 6 as improperly dependent upon multiple dependent claims. This objection has been rendered moot by canceling claims 4 and 5. Accordingly, withdrawal of the claim objections is solicited.

**Claims 1 through 6 were rejected under 35 U.S.C. § 103 for obviousness predicated upon JP-3221095-B (JP '095) in view of JP 2000-107758 (JP '758) or JP 63-028406 (JP '406).**

In the statement of rejection the Examiner concluded that one having ordinary skill in the art would have been motivated to modify the filter disclosed by JP '095 by rearranging the rejection layer and support for outside-in filtration in view of JP '406 or JP '758. The Examiner also relegated the various relationships specified in claim 1 as "an optimization" (paragraph bridging pages 4 and 5 of the February 2, 2006 Office Action). This rejection is traversed.

Firstly, the Examiner's "optimization" theory is legally erroneous in the present case. This is because the Examiner failed to provide objective evidence demonstrating that the optimized variables are, indeed, art recognized result effective variables. This being the case, the optimization approach is legally erroneous. See, for example, *In re Rijckaert, 9 F.3d 1531, 28 USPQ2d 1955 (Fed. Cir. 1993); In re Yates, 663 F.2d 1054, 211 USPQ 1149 (CCPA 1981); In re Antonie, 559 F.2d 618, 195 USPQ 6 (CCPA 1977).* Further, there are substantial differences between the claimed inventions and the applied prior art that undermine the obviousness conclusion under 35 U.S.C. § 103.

Specifically, JP '095 relates to a structure in which effective inside-to-outside filtration is performed by providing an inside layer having a smaller pore size to avoid clogging. However, the claimed invention involves more than using 2 layers with different pore sizes. Specifically, in accordance with the claimed invention, the pore size is defined by the particle blocking ability of the whole membrane of a filtration layer, taking into consideration the importance of a filtration surface and, in turn, the fiber length in the surface. Such concepts are not disclosed by JP '095.

In paragraph [0023] of JP '758, it is disclosed that:

"When a fluid to be treated is supplied from a support layer having a large pore size to a dense layer having a small pore size, clogging little occurs."

This appears to be the basis upon which a 3-layer structure is devised. However, the present invention is based on the opposite concept.

Specifically, in accordance with the present invention, a dense layer defined by RFL and a pore size is provided as an outside layer serving as a filtration surface, thereby decreasing clogging. When a fluid to be treated contains large particles with high turbidity, most of the large particles irreversibly enter large pores to decrease the apparent pore ratio in the filtration surface. Therefore, as disclosed in the present application, when micro short-fibers are provided on the outer side (filtration surface), particles do not enter the pores and can be easily removed from the membrane surface by a simple operation, such as back washing. This is found to be particularly suitable for treating high-turbidity fluids. This is a novel concept which is alien to the applied prior art.

JP '406 is directed to passing a fluid to be treated through a membrane to a transmission side **without trapping particles** (effective component) contained in the fluid. The disclosed system is **not** directed to trapping particles contained in the fluid. Unlike the present invention, JP '406 relates to improving a method for **transmitting** particles **without** trapping by a membrane. JP '406 is not directed to improving the manner of contact between the filtration surface and particles. Moreover, unlike the present invention, JP '406 seeks to change a pore structure using a second polymer for a prolate ellipsoidal base film. This is completely different from the present invention.

Based upon the foregoing, it should be apparent that the secondary references do not cure the argued deficiencies of 'JP '905. Moreover, JP '758 is based on a concept which is completely opposite to the present invention. As previously pointed out, JP '406 is not aimed to trapping particles contained in the fluid at all.

The Examiner's approach to the obviousness conclusion is overly simplistic, and based upon secondary references which are remote from the present invention. However, in order to establish the requisite realistic motivation, the Examiner must make clear and particular factual findings as to a specific understanding or specific technological principle and then, based upon such facts explain **why** one having ordinary skill in the art would have been realistically impelled to modify particular prior art, in this case the filter of JP '095, to arrive at the claimed invention. *In re Lee, 237 F.3d 1338, 61 USPQ2d 1430 (Fed. Cir. 2002); Ecolochem Inc. v. Southern California Edison, Co., 227 F.3d 1361, 56 USPQ2d 1065 (Fed. Cir. 2000); In re Kotzab, 217 F.3d 1365, 55 USPQ 1313 (Fed. Cir. 2000); In re Dembiczak, 175 F.3d 994, 50 USPQ2d 1614 (Fed. Cir. 1999).* Further, the requisite motivation must be undertaken with a reasonable expectation of success. *Velander v. Garner, 348 F.3d 1359, 68 USPQ2d 1769 (Fed. Cir. 2003);*

*In re Vaeck, 947 F.2d 488, 20 USPQ2d 1438 (Fed. Cir. 1991).* That burden has not been discharged.

It should, therefore, be apparent that a *prima facie* basis to deny patentability to the claimed invention has not been established for lack of the requisite factual basis and want of the requisite realistic motivation. Applicants, therefore, submit that the imposed rejection of claims 1 through 6 under 35 U.S.C. § 103 for obviousness predicated upon JP '095 in view of JP '758 or JP '406 is not factually or legally viable and, hence, solicit withdrawal thereof.

Based upon the foregoing, it should be apparent that the imposed objection and rejections have been overcome and that all pending claims are in condition for immediate allowance. Favorable consideration is, therefore, solicited.

To the extent necessary, a petition for an extension of time under 37 C.F.R. 1.136 is hereby made. Please charge any shortage in fees due in connection with the filing of this paper, including extension of time fees, to Deposit Account 500417 and please credit any excess fees to such deposit account.

Respectfully submitted,

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